

## Historic, archived document

Do not assume content reflects current  
scientific knowledge, policies, or practices.



Reserve

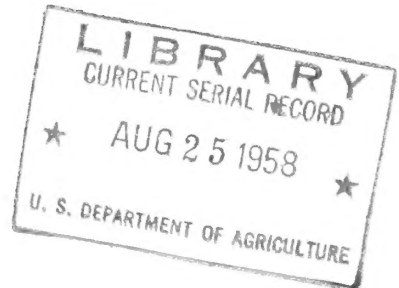
A 31.3

ARS-23-8-14-b

\* - \*

R31Ae

**FEDERAL-GRANT RESEARCH**  
**at the**  
**STATE AGRICULTURAL**  
**EXPERIMENT STATIONS**



**Projects on**  
**ECONOMICS OF MARKETING**  
**Fruits and Vegetables**  
**Part 14, Section b**

**Agricultural Research Service**  
**UNITED STATES DEPARTMENT OF AGRICULTURE**

Compiled April 1958 by

the State Experiment Stations Division, Agricultural Research Service, U. S. Department of Agriculture, Washington 25, D. C., for use of workers in agricultural research in the subject-matter areas presented. For information on specific research projects write to the Director of the Station where the research is being conducted.

Issued June 1958

FEDERAL-GRANT RESEARCH

at the

STATE AGRICULTURAL EXPERIMENT STATIONS

Projects on

ECONOMICS OF MARKETING

Section b: Fruits and Vegetables

Contents

Page

I. FRUITS AND VEGETABLES

|  |    |
|--|----|
| A. Market Structure and Functional Operation. . . . .                              | 1  |
| B. Market Prices--Supply, Demand, Consumption,<br>and Other Market Forces. . . . . | 7  |
| C. Consumer Preference, Acceptance, and Merchandising .                            | 10 |
| D. Grades and Standards . . . . .  | 14 |
| E. Market Information . . . . .  | 15 |
| F. Maintaining and Improving Quality--Costs and Returns                            | 16 |
| G. Costs, Margins, and Efficiency of Operation. . . . .                            | 19 |
| H. Transportation, Storage, and Interregional<br>Competition. . . . .              | 27 |
| I. Cooperatives (No projects in this section) . . . . .                            | -- |
| J. Government Programs. . . . .  | 30 |
| K. Utilization (Economics of) (No projects in<br>this section). . . . .            | -- |

|   |    |
|---|----|
| II. REGIONAL RESEARCH, INCLUDING STATES WITH CONTRIBUTING<br>PROJECTS . . . . . | 31 |
|---|----|

|   |            |
|---|------------|
| III. LIST OF SUBJECT-MATTER AREA COMPILATIONS . . . . . | Attachment |
|---|------------|



## INTRODUCTION

This compilation is one of a series providing information on State agricultural experiment station research supported by Federal-grant funds appropriated annually by Congress under authorization of the Hatch Act of 1887, as amended and approved Aug. 11, 1955, and Section 204(b) of the Agricultural Marketing Act of 1946. It is prepared for use by research workers in the subject-matter areas presented. Only that part of each State's research program supported by Federal-grant moneys is included.

In addition to the Federal-grant moneys, the State experiment stations receive some Federal support through cooperative agreements or contracts with the U. S. Department of Agriculture. Information on such research, along with other departmental research, is available in the Central Project Office, Agricultural Research Service.

A substantial part of each State agricultural experiment station's research is supported with moneys appropriated by the respective State or Territorial Legislatures and through other forms of private and public financing. Information on current agricultural research at the stations which is not financed under the Federal-grant program or through USDA cooperation can be obtained from experiment station directors.

The information given in the series of Federal-grant compilations includes the title and objectives of each Federal-grant project pertaining to the subject given on the cover. The identification of each project gives the department(s) conducting the research, the station number of the project, and the number of the regional project if it is a contributing project.

Relevant regional projects, if any, appear at the end of the compilation. States having projects contributing to regional projects are indicated. The Roman numeral (and capital letter) refer to the location in the summary of the contributing project title and objectives. The States are grouped into four major regions. These are designated NC-North Central, NE-Northeastern, S-Southern, and W-Western. The capital letter "M" following the letters for the region indicates regional marketing projects.





## MAJOR MARKETING FUNCTIONS AND TYPE OF STUDIES INCLUDED UNDER EACH

### A. Market Structure and Functional Operation

Marketing channels; organization of markets; operating policies and buying and selling practices in handling, storing, and distribution; availability and needs for facilities and services at various stages in the marketing process; competitive structure of markets; integration in the marketing process; impacts of technological changes.

### B. Market Prices--Supply, Demand, Consumption, and Other Market Forces

Elasticities of demand; demand schedules and changes in aggregate consumer demands; consumption trends; competitive position of different products; prices at different market levels--farm, wholesale, and retail--and their relationships; price differentiation and other pricing policies; quality premiums and discounts; how prices are determined.

### C. Consumer Preference, Acceptance, and Merchandising

Forms and amounts of family purchases; methods of processing and preparation for acceptability; consumer preference and buying behavior; motivations underlying consumer practices in buying; product promotion and buying practices.

### D. Grades and Standards

Economic implication to producers and consumers of quality groupings and standardization; consumer recognition of grades and qualities; economics of quality control and maintenance.

### E. Market Information

Developing outlook and situation reports and forecasts; methods of improving statistical reports and news service releases on market receipts and movements, prices, stocks; ways of disseminating market information; kinds of market information needed and forms in which it is most useful; ability to use market information; methods of obtaining information; accuracy of information.

### F. Maintaining and Improving Quality--Costs and Returns

Economic aspects of measures to preserve and control quality and avoid losses of quality of products; facilities for proper storage; grading and quality improvement programs.

### G. Costs, Margins, and Efficiency of Operation

Mark-ups, spreads, and discounts; the composition of margins; operating costs and returns and their measurement; input-output relationships and economies of scale; design and operation of facilities and equipment; work methods and organization; factors affecting efficiency.



- H. Transportation, Storage, and Interregional Competition  
Transportation and storage rates and charges; effect of rate structure on movement of products; truck versus rail; transportation costs and storage as related to price and production patterns; influence of transportation cost upon scale of operation of processing plants; interstate trade barriers.
- I. Cooperatives  
Services rendered and charges made; efficiency of operations; membership relationships; methods of financing; internal management policies and practices; function and place in the marketing system.
- J. Government Programs  
Public regulation of markets, product quality, and trading practices; impacts of parity formulas, price supports, storage programs, surplus disposal, and special measures to increase consumption on particular commodities and the agricultural economy in general.
- K. Utilization (Economics of)  
Economic feasibility of processing and marketing new products or existing products in new forms and uses; competition between new and established products and between commodities of agricultural and those of nonagricultural origin; measuring potential demand for new or improved products and services; product development and market testing; economics of waste and byproduct utilization.



## FRUITS AND VEGETABLES

### Market Structure and Functional Operation

- Ala.      Marketing Facilities and Handling of Truck Crops in Alabama. To (1) analyze trends in production and marketing of truck crops produced within State and make comparisons in relation to competing areas; (2) analyze farm marketing and handling practices in important areas of commercial production in State from standpoint of adequacy; (3) analyze certain markets and facilities from standpoint of adequacy; and (4) evaluate cooperative marketing in movement of State truck crops as means of increasing net income to farmers.  
Agr. Econ. 566 (SM-8)
- Ala.      Marketing Methods and Market Acceptability of Selected Horticultural Crops and Their Products. To (1) evaluate effectiveness of present marketing methods; (2) determine relative suitability of different marketing outlets; and (3) evaluate factors affecting market acceptance for certain improved horticultural products.  
Agr. Econ. ES 300
- Ga.      Facilities for Marketing Georgia Peaches. To (1) learn improvements in peach marketing facilities conducive to a more efficient handling system; (2) make time and motion studies of each of several operations to make for more efficiency; (3) study use of hydrocooler for marketing more mature peaches; (4) learn ways of reducing peach drop; (5) improve efficiency of packing sheds; (6) determine efficiency of present and proposed methods on cost of each method and value of packaged peaches; and (7) learn the facilities needed in State in near future to ship State fruit crop.  
Agr. Econ. ES 336
- Ky.      Evaluation of the Market for Fresh Fruits and Vegetables at the New Louisville Produce Terminal. To (1) record kinds and quantities of fruit and vegetables sold on New Louisville Produce Terminal by grades and package forms at various prices and dates; (2) learn how locally grown produce can be graded and packaged, and when it should be available to make it most acceptable to the trade.  
Agr. Econ. 42

- La.        Marketing Fruits and Vegetables. To (1) study marketing methods and practices of producers and marketing agencies to find means of effecting improvements which will increase efficiency and reduce costs of operations, maintain or improve product quality, and stimulate demand; (2) analyze nature and organization of marketing agencies as to adequacy of servicing, facilities, charges, etc.; (3) determine most profitable market outlets for Louisiana fruits and vegetables during different seasons of the year; (4) study sweet potato storage practices and costs to find conditions under which storage at various stages in marketing is economical; and (5) obtain data on fruit and vegetable processing, as a basis for pricing, to determine most profitable outlets, appraise production potential of the industry, and determine labor and material needs of processors.

Agr. Econ., Hort. 725

- Md.        Marketing of Maryland Sweet Potatoes. To (1) learn present market outlets for sweet potatoes; (2) analyze reactions of produce dealers at these markets; (3) study handling practices from time of harvest, through marketing channels, to consumer; and (4) study storage problems for sweet potatoes.

Agr. Econ. and Mktg. A-26-au

- Md.        Buying Practices of Fruit and Vegetable Processors. Compare buying practices of fruit and vegetable canners and freezers and learn relative influence of these practices on grower returns.

Agr. Econ. and Mktg. A-35 Coop. AMS

- Md.        Marketing Maryland Snap Beans. To (1) determine nature and extent of marketing facilities for handling snap beans, both fresh and for canning; (2) examine influence of these organizations and facilities on net returns for snap beans to growers for fresh market outlet and canning; and (3) design methods to improve existing organizations, facilities and practices.

Agr. Econ. and Mktg. ES 305

Miss.

Peach Culture, Marketing, and Variety Studies. To (1) determine influence of various peach orchard management practices on yield, grade, market quality and tree vigor; (2) study influence of cultural practices on market quality of different varieties; (3) evaluate adaptability to four varieties to commercial growing conditions in Pontotoc Ridge area; (4) study various practices of harvesting, packing and transportation of fruit and their influence on quality; (5) analyze waste losses of firm-ripe and green-mature fruit, and compare relative advantages and disadvantages of different types of containers; and (6) evaluate market potential for Mississippi peaches sold under these various conditions.

Hort. HK-19

Mo.

Marketing Missouri Vegetables. To determine (1) characteristics of the vegetable industry in Missouri in these areas; (a) products produced and location of this production, (b) volume of commodity by areas, (c) when product is produced and marketed and what other States produce and market this commodity at same time, (d) market outlets available and method and conditions under which product is sold, (e) prices received from market outlets as to various other uses; and (2) methods of marketing and institutional factors that have a bearing on marketing of fruits and vegetables in the State.

Agr. Econ. 262

N. J.

Improving Marketing Practices of New Jersey Fresh Vegetable Producers. To learn (1) adjustments needed in marketing practices of vegetable growers to facilitate orderly movement of vegetables through marketing channels in quality and quantity; and (2) proper containers needed to meet requirements of buyers.

Agr. Econ. 31 Coop. AMS

Okla.

Marketing Pecans in Oklahoma. To (1) describe and analyze trends in economic variables affecting pecan industry and interpret trends in terms of their probable impact on State industry over various periods; (2) measure, by statistical procedure, the major factors affecting demand for Oklahoma pecans and interrelations thereof; (3) learn present marketing organizations, facilities, methods and practices used in moving pecans from producer to retail consumer; (4) make preliminary investigation of feasibility and desirability of making a detailed cost and efficiency study of pecan shelling plants; and (5) analyze effects of specific modifications in present marketing organization, facilities, methods or practices in terms of marketing efficiency, market outlets and market stability, and returns to growers.

Agr. Econ. 977

P. R.

Marketing of Citrus Fruits in Puerto Rico. To (1) analyze and evaluate the present system of marketing citrus fruits in Puerto Rico; (2) point out weaknesses and strong points of the system; and (3) offer definite conclusions and recommendations to the industry.

Agr. Econ. and Rur. Sociol. 89 (SM-4)

P. R.

Marketing of Pineapples in Puerto Rico. To (1) analyze and evaluate methods, practices, and facilities for marketing pineapples; and (2) ascertain and appraise major problems in selling the fruit in local and export markets, and offer solutions to problems.

Agr. Econ. and Rur. Sociol. 92

R. I.

An Economic Appraisal of the System of Marketing Fruits and Vegetables in Rhode Island. To (1) learn nature and importance of various market outlets for vegetables in State; (2) discover and analyze reasons for market price differentials between locally-grown and shipped-in fruits and vegetables; (3) appraise physical, economic, and social factors affecting production and marketing of local fruits and vegetables; and (4) suggest reorganization possibilities for market and industry, or suggest additional research needed to make recommendations.

Agr. Econ. M-110



- S. C.      Roadside Marketing in South Carolina. To learn (1) number, location, type, cost, products handled, business volume, and management practices of South Carolina farmer-operated roadside markets in selected counties; (2) factors essential to the successful operation of markets; and (3) possibility of expansion of farmer roadside markets.  
Agr. Econ. and Rur. Sociol. 337
- S. C.      Economics of Harvesting, Handling and Marketing Peaches in South Carolina. Learn amount of physical damage and the economic loss occurred at each step or function in harvesting, handling, and marketing of fresh peaches; and test alternative methods which might be economically feasible and advisable.  
Agr. Econ. and Rur. Sociol. 376
- Tenn.      Buying Policies and Other Practices in the Tennessee Vegetable Industry. To (1) study effects of various market preparation methods upon the "marketability" or quality of produce, while in the same project recording and analyzing costs associated with alternative methods; (2) provide industry's producers and middlemen better bases for establishing price differentials on basis of quality; (3) investigate possible presence and results of monopoly elements; (4) study demand characteristics for particular vegetables with special reference to quality; and (5) study "overall" operational efficiency and operational efficiencies of specific aspects of dominant processing-marketing firms.  
Agr. Econ. and Rur. Sociol. 23 (SM-8)
- Tex.      Distribution and Importance of the Vegetables Marketed From Texas. To learn (1) distribution and volume of various vegetables within market areas for mixed and straight rail and truck loads; (2) number of various types of containers used to ship vegetables; (3) state of origin, importance, and volume of fruits and vegetables consumed in Texas.  
Agr. Econ. and Sociol. 960 (SM-8)

Tex.            Analysis of the Fruit and Vegetable Marketing Problems of East Texas With Respect to Harvesting and Packing Practices, Market Organization and the Competitive Position of the Area.  
To (1) evaluate present fruit and vegetable harvesting and packing practices in area with respect to their effect on final market quality of product and effect on demand for products in relation to current standards and requirements of trade; (2) make economic analysis of general efficiency of present market organization and its facilities, from viewpoint of sellers and buyers; and (3) learn general competitive position of East Texas in commercial production of specific fruit and vegetables indigenous to area.

Agr. Econ. and Sociol., Hort. 1053 (SM-8) Coop. AMS

Utah            Marketing Fruits and Berries Grown in Utah. To determine (1) organization of agencies engaged in production and marketing of Utah fruits and berries, including functions of major handlers, their major sources of supply and market outlets; (2) ways to improve and increase acceptance by the trade and consumers in both Utah and out-of-State markets of Utah-grown fresh fruit; (3) alternative outlets for Utah fruits, particularly of lower grade, including also new markets for fruit for fresh consumption and also markets in a variety of processed forms; and (4) amount and type of processing, packing and storage facilities needed and that are best adapted to Utah conditions for proper preparation and sale of fruits, including form of economic organization best adapted to provide facilities and related services.

Agr. Econ. and Mktg., Hort., Home Econ. 435

Wash.            Improving the Marketing of Western Deciduous Tree Fruits.  
To (1) initiate studies relating to various aspects of the demand for deciduous tree fruits, and (2) take steps for collection of needed basic data for the sharper delineation and analysis of problems of the deciduous tree fruit industry in Western Region.

Agr. Econ. 797

Market Prices--Supply, Demand, Consumption,  
and Other Market Forces

Alaska

Technological Improvements to Increase the Quality and Consumption of Alaskan Potatoes. To learn (1) why Alaska consumers prefer stateside-grown potatoes and evaluate economic implications of commercial adaptation of technological changes by growers and handlers; (2) by chemical analysis and organoleptic tests if Alaskan potatoes differ from stateside potatoes; and (3) if Alaskan potatoes are as acceptable as stateside ones when grown under varied soil and fertilizer conditions, stored and handled in a manner comparable to stateside.

Hort., Agr. Econ. ES 476

Calif.

(Berkeley)

The Behavior of Prices and Margins at the Various Stages of Marketing Fresh Fruits and Vegetables. To (1) develop efficient operating and research procedure to collect appropriate data and analyze it to determine, measure, and explain the temporal behavior of prices and marketing margins at several stages of distribution and of factors associated with such behavior; (2) determine and analyze statistically the interrelationships between changes in wholesale prices and changes in retail prices, with consideration to lead and lag tendencies as well as sluggishness and responsiveness of retail price changes to wholesale price changes; (3) determine and analyze statistically the behavior of and relations between marketing margins and their relation to sales prices at the successive points in distribution supply pipeline between producer and consumer; (4) determine and analyze statistically the net functional relations between changes in retail prices and changes in quantities sold at retail; and (5) determine and analyze statistically temporal daily distribution within retail selling period of a week of the daily volume sold as a percent of the week's total, so as to yield information useful in timing and temporal distribution of sales by distributors and purchases by retailers.

Agr. Econ. 1363

Calif.                    Economic Factors in the Selection of Products and Markets  
(Berkeley) in Plant Location and Organization in the Freezing of

California Fruits and Vegetables. To (1) learn physical and economic relations in the assembly of product and operation of freezing plants for western fruits and vegetables, such as: effects on costs of these factors (a) processing methods and plant organization, (b) type and number of products handled in a single plant, (c) plant location and scale of operation; (2) learn supply, demand, and price relations for frozen fruits and vegetables, including: (a) quantification of major determinants of prices and regional rates of consumption, and (b) projection of changes in regional rates of consumption in response to changes in population, incomes, prices, and tastes; (3) learn competitive position of California frozen fruit and vegetable industry in the national market; and (4) project efficient pattern of growth of industry.

Agr. Econ. 1571 (WM-17) Coop. AMS

Fla.                    The Characteristics of the Demand for Frozen Orange  
Concentrate Produced in Florida. To determine (1) characteristics of demand for frozen orange concentrate and other forms in which Florida oranges are consumed.

Agr. Econ. 664 (SM-4)

Idaho                   Market Potentials for Processed Idaho Potatoes. To find (1) degree of competition in consumption between fresh potatoes and processed potato products at various consumer price relationships; (2) present and future demand for processed potatoes at specific price ratios; (3) potential market for new processed potato products; and (4) competitive or supplementary position in the market for products.

Agr. Econ. 334 Coop. AMS

Ill.                    Economics of Apple Varietal Production in Illinois. To obtain data on the grower level on net returns for major varieties of apples produced in Illinois in order to learn the relative profitableness of the different varieties.

Agr. Econ. 05-347

Ky.                    Price and Yield Variation of Truck Crops Produced for  
Market in Kentucky. To learn what average seasonal price patterns prevail for Kentucky-produced truck crops and, from historical observations, what variability can be expected in year-to-year average prices, in yields per acre, and in seasonal price movements.

Agr. Econ. 44

Minn.

A Study of the Sweet Corn Industry in the Midwest Farm Economy. To (1) describe the current economic position of the sweet corn industry in the midwest farm economy; and (2) appraise prospective developments in the sweet corn industry in terms of (a) the prospective demand for sweet corn, (b) how the midwest will share in prospective demand, (c) the nature and performance of markets.

Agr. Econ. 1131 (NCM-13)

N. Y.

(Cornell)

An Economic Study of Factors Affecting the Demand for and Prices of New York State Potatoes and Competing Products.--VII, Changes in the Production and Marketing of Potatoes and Their Significance to New York Farmers. To study new areas of production, the introduction of new varieties, new packaging methods, etc.

Agr. Econ. 1-7

N. Y.

(Cornell)

Quality and Other Factors Responsible for Differences Between the Prices of New York State Vegetables and the Prices of Vegetables from the West and the South. To (1) obtain data and photographs on wholesale and retail and market quality of State-grown vegetables useful in reporting back to growers on a comparison of their vegetables with vegetables of their competitors; and (2) quantitatively study relation of market quality and other factors on price differentials between vegetables from New York State and competing areas.

Veg. Crops 208

Ohio

Trends in Production, Prices and in the Methods of Marketing Ohio Fruits and Vegetables. To (1) determine trends in production and use of fruits and vegetables; (2) determine trends in prices of major fruits and vegetables and reasons for trends; (3) determine trends in production and prices of fruits and vegetables in competing States and areas relative to Ohio; and (4) evaluate trends in terms of their effect on marketing efficiency in these crops in Ohio relative to competing States under present and probable future conditions.

Agr. Econ. and Rur. Sociol. 98

Ohio

Analysis of Fresh Fruit and Vegetable Prices on the Ohio Wholesale Markets. To (1) learn price differences due to variety, grade, size, type pack and other market factors; and (2) recommend to Ohio growers variety, grade, size, and type pack of fresh fruits and vegetables that bring highest prices on Ohio wholesale markets.

Agr. Econ. and Rur. Sociol. 178

Tenn.

Buying Policies and Other Practices of Vegetable Marketing Organizations in Tennessee. To determine effects of (1) buying policies and practices of firms on quality of strawberries, tomatoes, and cabbage purchased for both intra and interstate markets; and (2) buying policies of firms on price the producer received.

Agr. Econ. and Rur. Sociol., Hort. 9 (SM-8)

Consumer Preference, Acceptance, and Merchandising

Idaho

Analysis of Consumer Preference and Price Relationships of Idaho Prunes. To learn (1) consumer prune preferences as to size and type package desired, ripeness and size of prunes desired, uniformity of prunes desired, prices preferred, prune substitutes on market, effect of shriveling and other forms of deterioration on buying; (2) prune consumer characteristics as to size of family, occupations and nationality of family; (3) consumer buying and handling practices as to amount of prunes purchased, prices paid, competing fruits in home use, use of fresh, canned and frozen prunes, use of recipe folders; (4) retailer handling and selling practices as to type and size of display of prunes, type and size of package, condition of prunes in store, handling and storing practices, preference as to length of season for handling prunes, competition from other fruits during prune season, store losses from deterioration; (5) wholesale and jobber handling practices and preference as to reasons for storing and length of storage period, who makes decision on cutoff date and how decisions made, preferences as to type and size of package from grower to them, prepackaging procedures; and (6) competition from other fruits during prune season.

Agr. Econ., Hort. 338

Idaho

Consumer Preference for Branded Idaho Potatoes. To learn (1) consumer preference for: stamped vs. nonstamped potatoes, Idaho Russets vs. Russets from other States; (2) legibility and appearance of stamping tubers with "Grown in Idaho"; (3) competitive position of Idaho Russet Burbank potatoes with Russets from other States as measured by: amount and seriousness of defects, tuber size range and uniformity, selling price and volume of Idaho Russet Burbank potatoes as compared to Russets from other States; (4) consumer preferences with reference to: tuber size, grade and quality as related to price and use, source, seasonality of purchases, size of purchase per store visit.

Hort., Agr. Econ. 342

- La.            Economic Advantages and Disadvantages of Sizing Sweet Potatoes. To determine economic advantages and disadvantages of sizing sweet potatoes and indicate desirable procedure.  
Agr. Econ., Hort. 807 (SM-8)
- La.            Merchandising Louisiana Fruits and Vegetables. To  
(1) ascertain effect of different sizes and shapes, qualities, and varieties of product on consumer demand in retail stores;  
(2) determine preference and expectations of consumers for certain stages of preparation of the product for final use;  
(3) survey present methods of displaying fresh fruits and vegetables at retail; (4) evaluate relative effectiveness of different display techniques in attracting interest of consumers; (5) determine preferences of consumers for bulk vs. packaged product with or without a price differential; and (6) determine type and size(s) of packages best suited to specific products.  
Agr. Econ., Hort. 836
- La.            Marketing Figs. To (1) improve and expand existing markets; (2) learn storage and handling requirements of fresh figs.  
Hort., Agr. Econ. 974
- La.            Consumer Demand for Canned Sweet Potatoes and Okra.  
To learn nature of present and potential demand for canned sweet potatoes and okra so that growers, canners and wholesale and retail distributors may improve production and marketing of same.  
Agr. Econ., Hort. ES 318
- Maine          Improved Marketing Practices for Maine Processed Crops.  
To (1) learn volume of retail sales for various qualities, grades, styles, brands, sizes of containers and other allied factors accompanied by prices of certain processed products by present merchandising methods in selected New England markets; and (2) suggest and test various methods and techniques to increase sales and consumer satisfaction, and maximize returns to producers.  
Agr. Econ. and Farm Mgt. 56 (NEM-16)
- Maine          Development of Improved Methods on Merchandising Apples in Retail Stores. To learn (1) relative effectiveness of certain methods of merchandising practices on sale of apples by controlled experiments; and (2) amount of grade bruises associated with methods of merchandising.  
Agr. Econ. and Farm Mgt. 57

Maine      Evaluation of Merchandising Practices on Retail Sales of Potatoes. Cooperate with Maine Potato Commission and Maine Department of Agriculture in measuring combined effect of advertising and promotional media on potato sales. Conduct study in markets where Commission conducts an extensive advertising and promotional program with one of quality packs of potatoes. Analyze effectiveness of various types of advertising and promotional media and of complete program. Conduct experiments to learn effect of various types of displays on sales of potatoes in retail stores.  
Agr. Econ. and Farm Mgt. 113 (NEM-20)

Maine      Costs and Efficiency in Marketing Washed and Unwashed Potatoes of Various Qualities to Meet and to Develop Consumer Demand. To (1) determine cost of maintaining much of original quality of potatoes from shipping point to consumers; (2) study actual consumer preference for various qualities of potatoes at different price ranges; (3) determine whether consumers prefer washed potatoes to those unwashed and the additional cost of washed potatoes; and (4) study efficiency measures of handling potatoes through various steps in marketing in supplying consumers with various qualities of potatoes.  
Agr. Econ. and Farm Mgt. ES 19

Mass.      Marketing of Frozen Cranberry Products. Survey number of packers of above in Northeast with regards to volume, type of product, containers used, and consumer acceptance.  
Food Technol. 130 (NEM-16)

Mich.      Measuring and Analyzing the Consumer Market for Fruits and Vegetables. To (1) determine patterns of consumer purchases of individual fruits and vegetables of importance to Michigan; and (2) determine factors associated with different patterns of consumer behavior, and measure market potential for Michigan fruits and vegetables.  
Agr. Econ. 112

Miss.      Consumer Preference for Newly Developed Varieties of Fruits and Vegetables. To learn consumer preferences for newly developed varieties of fruits and vegetables relative to existing commercial varieties.  
Agr. Econ. HA-21



- N. J.      Development of Improved Handling and Packaging Practices for Selected Vegetables and Analysis of Their Impact on Costs and Returns. To (1) study feasibility and economic effects of prepackaging selected vegetables in consumer-size packages at farm or shipping point; and (2) test feasibility of moving selected vegetables to chain warehouses in bulk as palletized containers for prepackaging at this point.  
Agr. Econ., Hort., Food Technol. 29 (NEM-18)
- N. Y.  
(Cornell)      Experiments in Retail Stores and on Selected Farms to Determine Consumer Acceptance of Potatoes. To learn to what degree sales of white potatoes may be stimulated, and to what extent consumers are willing to pay for clean, sorted potatoes in bulk or in transparent film bags or other containers. Learn effectiveness on price to farmers and retailers, at point of sale, of local or area promotional practices.  
Agr. Econ. 12-6 (NEM-20)
- N. Y.  
(Cornell)      An Evaluation of the Status of Prepackaging Vegetables in the Northeast. To learn if and to what degree vegetables grown in the Northeast are being packaged in consumer units, and what changes need to be made to meet rapidly changing competitive conditions in entire fresh vegetable industry.  
Agr. Econ., Veg. Crops 13-3 (NEM-18)
- N. Y.  
(Cornell)      Fruit Marketing.--7. Influence of Merchandising Practices on Volume of Fruit and Vegetables Sales. To determine influence of merchandising practices on volume of fruit and vegetable sales in retail stores.  
Agr. Econ. 14-7
- N. Dak.      Potato Grade-Price Relationships in the Red River Valley. To (1) contribute to development of economic principles for more effective grading and pricing practices; (2) analyze functions and limitations of grading and pricing practices used in marketing agreement and order programs and effect on producer returns.  
Agr. Econ. 3-7 (NEM-15)
- Pa.      Merchandising of Processed Mushrooms. To learn (1) consumer attitudes associated with level of consumption of processed mushrooms; (2) extent of consumer knowledge concerning potential ways of using processed mushrooms; and (3) effect of various merchandising practices, developed from findings above, on sales of processed mushrooms.  
Agr. Econ. and Rur. Sociol. 1172-E (NEM-16)

- Pa.            Economic Effects of Various Potato Marketing Practices.  
To learn effect of practices such as washing, sizing, grading, and packing in different types of bags, on consumer and trade demand, and on grower costs and returns.  
Agr. Econ. and Rur. Sociol. 1259 (NEM-20)
- P. R.        Expanding the Market for Selected Vegetables in Puerto Rico. To (1) learn possibility of expanding market for selected vegetables through adequate outlets, facilities and services; and (2) indicate needed improvements.  
Agr. Econ. and Rur. Sociol. 97 (SM-8)
- Tex.        Consumer Preference for New or Improved Varieties of Fruits and Vegetables and New or Improved Methods of Marketing Fruits and Vegetables. To (1) learn consumer acceptance of new varieties of fruits and vegetables developed or proposed for recommendation to fruit and vegetable growers; (2) develop and market test: (a) new methods of packaging to enhance quality or improve consumer demand for Texas fruits and vegetables; (b) new or improved merchandising methods for Texas fruits and vegetables.  
Agr. Econ. and Sociol., Hort. 1152
- Va.        Merchandising Practices and Marketing Services Affecting Sales of Virginia Apples. To (1) measure effect of retail pricing policies, merchandising practices, quality and other factors on sale of Virginia apples; and (2) determine use of processed and fresh apples in the home, consumers' preference for various quality factors, and marketing services connected with distribution of apples.  
Agr. Econ. and Rur. Sociol. 86063
- Grades and Standards
- Ill.        Economics of Grading Vegetables Grown in Chicago Area in Conformity with Quality Standards. To determine what grade standards should be used by vegetable growers in the Chicago area to maximize returns.  
Agr. Econ. 05-349
- Nebr.       Marketing Practices Associated with the Grading and Pricing of Potatoes. To learn (1) grading and pricing practices that will accurately reflect terminal market demands back to grower and shipper; and (2) effect of grades and other quality indicators on prices for different lots of potatoes sent from shipping points in various States but which compete in same terminal markets.  
Agr. Econ. 501 (NCM-15)

Ohio

Grade-Price Relationships for Potatoes with Special Reference to the Nearby Producer. To (1) learn principles for profitable grading for nearby markets; and (2) develop principles of grading that will help nearby and distant producer to better satisfy consumer.

Agr. Econ. and Rur. Sociol. 134 (NCM-15)

Tex.

Consumer Demand for and Development of Improved Grades and Standards for Pecans. To (1) learn variation in price-quality and grade relationship for in-shell pecans as sold under current marketing practices in retail stores; (2) develop improved, or new, standards and grades designed to eliminate consumer uncertainty as to quality of pecans purchased on in-shell basis, improve returns to practices; and (3) measure consumer demand and preference for in-shell pecans sold on improved grade basis in retail stores compared to previous methods of selling and in relation to pecans sold on shelled basis.

Agr. Econ. and Sociol., Home Econ., Hort. ES 378

Va.

Time and Recovery Studies in Apple Processing. To learn (1) length of time required to perform different processing operations when using apples of different grades and sizes; (2) yield of peeled, cored, whole apples and of sliced apples obtained from above grades and sizes and recoverable waste from same; and (3) by these data, price differentials that processors could economically pay for apples of different qualities and sizes based on time required to perform operations and recovery experiences, learn economic feasibility of adopting proposed new quality and size standards for apples for processing.

Agr. Econ. and Rur. Sociol., Hort. 86033

#### Market Information

Maine

Developing Techniques for Improving Market News Data on Maine Potatoes. To (1) learn capacity, condition of structure and operational facilities of farm and track potato storage houses in Maine; (2) develop and appraise sampling procedures for estimating storage holdings of seed and tablestock potatoes immediately after harvest and at two subsequent dates during marketing season (separate estimates for Russet Burbank and for round varieties); (3) develop sampling techniques for evaluating size and quality of important varieties stored at harvesttime and quality of these at two subsequent periods during marketing season; and (4) appraise need of extending scope of marketing news data to include prices for additional shipping points and uses made of potatoes.

Agr. Econ. and Farm Mgt. ES 533

- Tex.            West Texas Vegetable Market Potentials and Facility Requirements. To (1) evaluate specific vegetable crops in terms of competitive position at season of production; (2) analyze potential buying strength for specific qualities and quantities of each crop at specific markets at season of production; and (3) learn facility requirements in terms of volume, location, crops handled, packing, labor, and transportation.  
Agr. Econ. and Sociol., Hort. 1077 Coop. AMS
- Maintaining and Improving Quality--Costs and Returns
- Calif.  
(Davis)        Losses in Vegetables During Marketing as Influenced by Harvest Conditions and Post-Harvest Handling Procedures. To (1) learn effect of following on deterioration, composition and stage of maturity of harvest, temperature during harvesting, handling and market distribution, post-harvest use of fungicides, insecticides and protective materials; (2) learn physical methods of harvesting and handling; and (3) indicate changes in marketing procedures to improve attractiveness, quality and food value and expand market for vegetables.  
Veg. Crops, Agr. Econ., Home Econ. 1653
- Fla.            Economy of Marketing and Methods of Handling Sweet Corn for Long Distance Shipments. To determine methods of grading, precooling, packaging, shipping, and retailing sweet corn to maintain high quality most remunerative to growers.  
Veg. Crops, Agr. Econ., Food Technol. and Nutr.  
630 (SM-8) Coop. AMS
- Ga.            Feasibility of Sizing and Hydrocooling as Practices for Improving the Marketability of Cantaloupes. To determine for cantaloupes (1) advantages and disadvantages of sizing and hydrocooling; (2) desirable procedures for sizing and hydrocooling; (3) desirable packaging; and (4) sizes, varieties, and stages of maturity desirable.  
Agr. Econ. M-13 (SM-8)

- Ga.            Marketing Vine-Ripened Georgia Tomatoes. To learn (1) costs and margins in moving pink and green-wrap tomatoes from farmer to retail stores; (2) time pink tomatoes will "hold up" in market; (3) loss from deterioration of pink and green-wrap tomatoes in marketing channels; (4) distance from producing area pink tomatoes could be marketed; (5) response of consumer to such a marketing practice; (6) reaction of producers to selling pink tomatoes and months they could be made available; (7) present and potential production areas in State applicable to such a practice; and (8) economic significance of such a marketing practice to farmers of Georgia.  
Agr. Econ., Hort. 304
- Ill.           Marketing Illinois Peaches. To (1) analyze present marketing conditions of Illinois Peaches; and (2) determine problems involved and methods of marketing and quality, especially of mature peaches, through established channels of trade.  
Agr. Econ. 05-348
- Ill.           Quality Relationships in Marketing Fresh Tomatoes.  
To learn (1) how quality of tomatoes grown in this region is influenced by harvesting and handling practices; (2) if yield-grade-quality relation and cost of marketing practices justify commercial production for fresh market in North Central Region. Phase II. To (1) learn quality of tomatoes offered for sale in markets of North Central States during season they are marketed from this area; (2) obtain data on price differentials as influenced by quality and supply interaction; and (3) learn handler preference and objective survey of tomato quality factors.  
Hort. 65-333 (NCM-24)

- Miss.      Marketing Practices and Market Outlets for Mississippi Peaches. To (1) analyze available statistical material on trends in Mississippi peach enterprise with respect to (a) market supplies, prices and value of peach crop; (b) market outlets and usual marketing season; and (c) competition from other peach-producing areas; (2) determine marketability of Mississippi peaches sold under various methods of packaging, different quantities in each lot marketed at different places, and similar conditions affecting preparation for market and market operation; and (3) study practices used by commercial producers in harvesting, handling and marketing their crop.  
Agr. Econ. HA-8
- Pa.      Economic Evaluation of Bruising Damage in Harvesting and Marketing Apples. To (1) estimate extent and learn causes of bruising damage during harvesting and marketing apples through processing and fresh market channels; and (2) evaluate and recommend methods for reducing economic losses from bruising.  
Agr. Econ. and Rur. Sociol. 1338
- Tex.      Improving and Maintaining Quality of Fresh Citrus Fruits from Grove to Consumer Markets. To determine (1) what modifications in marketing processes should be made by growers, packing, transportation and merchandising agencies to improve quality of grapefruit offered to consumers; and (2) probable future trends of type and quality demands by consumers in selected Texas markets.  
Agr. Econ. and Social., Hort. 897 (SM-4) Coop. AMS
- Tex.      Marketing Practices in Relation to New Varieties of Peaches. To (1) learn maturity indices for new varieties of Texas-grown peaches; (2) learn best method of handling fruit to reduce bruising from field through packing shed; (3) evaluate containers for packaging firmripe fruit; (4) learn best method of ripening firmripe peaches, storage, repacking and distribution; and (5) learn consumer acceptance and demand of new Texas-grown varieties of peaches.  
Agr. Econ. and Sociol. 1066
- Tex.      Maintaining Quality of Texas Vegetables and Avocados from Grower to Consumer Markets. Learn feasible methods of maintaining quality through fresh and processed marketing channels for new introductions and commercially produced vegetables.  
Agr. Econ. and Sociol., Hort. 1114

W. Va.            Marketing Peaches. To determine (1) effect of price on tree-ripe peach sales; and (2) relative cost of picking and packing hard mature peaches compared to that of tree-ripe peaches.

Agr. Econ. 64

Costs, Margins, and Efficiency of Operation

Calif.            Economic and Engineering Studies of Packing House Practices.  
(Davis)           Economic studies will include labor input incentive systems,  
(Los Angeles)   time and motion studies, and such other investigations as may be needed to improve work efficiency, working conditions, and physical efforts of employees. Engineering studies will include analysis of the flow of materials through the packing-house and storage rooms, fruit handling equipment, disposal of products, by-products and wastes, efficiency of mechanical equipment, and analysis of operations which may lead to equipment improvement, labor reduction, and lower operating costs.

Agr. Econ., Agr. Engin. 1331

Calif.            Cost and Efficiency with New Methods of Packaging and  
(Berkeley)       Handling Deciduous Fruits in California. To (1) estimate impact of new containers and methods of packaging on costs and efficiency in packing and shipping operations for deciduous fruits; and (2) indicate cost reduction possibilities through use of new methods for handling deciduous fruits in orchard and packinghouse operations.

Agr. Econ. 1573 (WM-19) Coop. AMS

Calif.            Costs and Efficiency in the Marketing of Selected Cali-  
(Berkeley)       fornia Fruits and Vegetables. To (1) determine basic physical and economic relationships involved in the operation of deciduous fruit packinghouses; (2) indicate how changes in work methods, type of equipment, and in-plant organization will affect efficiency and costs; and (3) develop practical means, on the basis of the above, for improving efficiency in operation of California deciduous fruit packinghouses.

Agr. Econ. 1574 Coop. AMS

Calif.  
(Davis)

Engineering, Qualitative and Economic Studies of the Packaging, Handling and Shipping of Deciduous Fruit. To (1) develop new containers, suitable equipment, and improved techniques for packaging and handling deciduous fruit, and determine how these developments influence plant operations, packing and shipping costs, and quality of product at consumer level; (2) determine basic laws underlying volume fill in containers for various shapes and sizes; (3) work with container manufacturers in developing suitable containers and standardizing packages as soon as basic principles are established; (4) develop improved equipment for more accurate sizing of fruit if needed; (5) apply known principle of electronic color sorting, if sorting on basis of color becomes necessary; (6) study car-loading patterns to determine best arrangements for full or partial shipments on containers of various types; (7) determine best methods of precooling fruit packed, or to be packed, in various type containers; (8) keep continuous record of condition and quality of fruit from time it leaves tree until reaching final consumer; (9) study influence of maturity on handling and packaging; (10) make economic studies of pilot packing lines to compare with studies of conventional methods; (11) determine the overall influence of the above studies upon the final cost of the fruit to the consumer and the return to the grower; and (12) determine market acceptance of fruit in new packages at jobber and retail levels.

Agr. Engin., Pomol., Agr. Econ. 1579

Fla.

Cost and Factors Affecting the Cost of Marketing Citrus Fruits in Fresh and Processed Forms. To study factors affecting the cost of handling and processing fruits by type of fruit and container and how methods of operation affect cost and efficiency.

Agr. Econ. 486 (SM-4) Coop. AMS

Fla.

An Analysis of the Efficiency of the Elemental Functions of Packing and Handling Florida Citrus from the Tree Through the Packing House. To measure efficiency of elemental functions of packinghouse operations of Florida fresh citrus fruit.

Agr. Econ. 626 (SM-4) Coop. AMS



- Fla.      An Analysis of the Efficiency of the Elemental Functions of Packing, Shipping and Handling Florida Citrus from the Packing Line to the Retail Store. To evaluate methods of handling citrus fruit, for fresh consumption, from packing line to retail store with particular reference to cost comparisons between bulk hauling, handling fruit in cardboard boxes, and conventional method of boxes and bags.  
Agr. Econ. 665 (SM-4) Coop. AMS
- Fla.      Distribution of Citrus Packing House Costs. Develop a method of prorating citrus packinghouse costs to various types of packs by use of time study data.  
Agr. Econ. 782 Coop. AMS, FCS
- Fla.      Marketing Charges and Returns from Florida Vegetables by Types of Firms and Methods of Sale. To investigate (1) conditions which determine methods of sale used by Florida firms in marketing green beans, green peppers and tomatoes; and (2) effect of method of sale upon marketing charges and returns to growers.  
Agr. Econ. ES 235
- Idaho      Cost and Price Efficiencies in Potato Marketing. To (1) find methods so Idaho packers can reduce packing costs by (a) better adjustment of labor force and equipment to potato volume and quality, (b) better building layout and equipment arrangement, (c) help machinery companies develop machine to rotate potatoes on grading table, and (d) find or assist in development of machine to enable packers to size long potatoes economically; and (2) develop pricing formula for packers' use in buying potatoes from growers.  
Agr. Econ., Agr. Engin. 285 (WM-19)
- Kans.      The Marketing of Kansas Potatoes, Melons, Onions, Fruits, and Minor Crops. To (1) determine costs and methods of preparing and marketing Kansas potatoes in relation to consumer's demand and producer's net incomes; (2) determine production and marketing techniques that will increase the demand for Kansas melons; (3) learn new methods of harvesting, storing, merchandising, and market outlets for Kansas onions; (4) learn existing methods of harvesting, processing, storing, and marketing of Kansas fruits; and (5) consider possible re-organization of the marketing procedures used by small producers to stabilize producers' incomes and to reduce marketing costs.  
Econ. and Sociol., Hort. 257

Maine

Developing More Efficient Handling of Apples in Storage and Packing Plants. To (1) learn efficiency of alternative methods and facilities in storing, sizing, grading, packaging, and shipping Maine apples from farm and commercial storages; and (2) develop and test certain facilities and handling methods in experimental storage and packinghouse at Highmoor Farm.

Agr. Econ. and Farm Mgt. 88 (NEM-19) Coop AMS

Maine

Developing More Efficient Work Methods, Devices and Equipment for Physical Handling, Cleaning, Washing, Waxing, Grading, Sizing, Packaging and Other Related Practices on Maine Potatoes in Commercial Packing and Storage Houses. To increase productivity of labor employed in Main potato storage and packinghouses and reduce losses from decay, bruises, and other injuries by: (1) measuring relative efficiency of various types and combinations of types of equipment, including innovations, for performing materials handling, cleaning, washing, waxing, sorting, sizing, packing and other related practices in commercial potato packing and storage houses under variable conditions; (2) developing and testing improved methods for using various types and combinations of types of equipment for these operations; (3) developing plans for testing prototypes of new types of equipment; (4) determining amounts of equipment of various sized workload; (5) determining amounts of space that can be used in bins and storeroom when different types of equipment are used; (6) determining types of equipment and design of storage houses to most economically provide proper storage conditions; and (7) translating data from studies of materials handling practices into improved commercial facility designs.

Agr. Econ. and Farm Mgt., Agr. Engin. ES 299

Md.

Economies of Scale, and Factors Affecting Variations in Costs of Processing Fruits and Vegetables in Maryland. To learn (1) unit cost of processing food products in single and multiple product plants; (2) extent of variation in unit cost by products and at varying levels of operations as percentages of plant capacity; and (3) variation in unit product cost among plants of different sizes at similar levels of capacity operation.

Agr. Econ. and Mktg., Hort. A-34 (NEM-16)

Md.

Quality and Volume Effects Upon Economics of Plant Operation in the Canning of Tomatoes, Corn and Peas in Maryland. To determine influence of variations in quality, volume, and warehouse handling on plant efficiency and merchandising.

Agr. Econ. and Mktg. ES 301

- Mich.            Increasing Efficiency in Operation of Firms Handling Agricultural Products. To conduct studies designed to measure and compare costs and efficiency of alternative technologies, practices, procedures, and size of firms or plants handling agricultural products.  
Agr. Econ. ES 289
- N. J.            Pilot Scale Precooling Studies with Certain Fresh Fruits and Vegetables and Shipping Quality Characteristics of New Jersey Blueberry Varieties. To evaluate (1) hydrocooling (with new test chemicals) on quality maintenance of strawberries, lettuce, peaches, snapbeans under controlled lab conditions; (2) vacuum cooling on quality maintenance of lettuce and other produce under controlled lab conditions; (3) economic feasibility of vacuum cooling and hydrocooling under State conditions; (4) shipping quality characteristics of blueberry varieties under controlled lab conditions and in test shipments to distant markets; and (5) air blast cooling process on quality maintenance of berries under controlled pilot scale operations.  
Agr. Econ., Food Technol., Plant Path. 28
- N. Y.  
(Cornell)       Methods and Costs of Storing and Packing Apples. Improve overall efficiency of apple storing and packing in order that unit costs and fruit injury may be reduced.  
Agr. Econ. 14-9 (NEM-19)
- N. Y.  
(Cornell)       Changes in Costs of Marketing Apples Associated with Curtailment or Expansion in Consumer Service. To determine the comparative costs of different types and methods of consumer packaging. Costs will be examined in terms of manpower, equipment and material requirements together with the distributive shares of such costs.  
Agr. Econ. 191
- Ohio            Methods, Costs and Efficiencies in Grading, Packaging, and Marketing Apples. To (1) determine costs for various methods of grading, packaging, and marketing of apples under various scales of operation; (2) compare relative efficiencies of farm, wholesale and retail store level prepackaging operations and determine probable trends in each; and (3) develop ideal or model plans for apple packaging and marketing from studies and theoretical packaging and marketing operations.  
Agr. Econ. and Rur. Sociol. 114

- Oreg.      Labor and Equipment Efficiency in Freezing Oregon's Principal Fruit and Vegetable Crops. To (1) describe frozen food industry of State with emphasis on green peas and beans, sweet corn, and strawberries; (2) learn physical input-output relationships in raw material assembling and freezing operations; (3) learn comparative efficiency of different methods, organizations, and scale of operations used in assembling and freezing; and (3) estimate costs for assembling and freezing operations.  
Agr. Econ. 280 (WM-17) Coop. AMS
- Oreg.      Cost and Efficiency Comparisons of New Methods and Equipment used in Handling and Packing Winter Pears. To (1) learn and evaluate comparative costs and efficiencies of new handling and packing methods and equipment; and (2) recommend changes in methods and equipment that will reduce costs and increase efficiency in handling and packing at shipping point.  
Agr. Econ. 281 (WM-19)
- Oreg.      Costs and Efficiencies in Packing Oregon-Idaho Onions. Learn costs and efficiencies in packing onions with special reference to: different methods being used, effect of package size on costs, packout percentage as it affects costs, effect of scale of operation on costs.  
Agr. Econ. ES 509
- Pa.      Efficiency in Packing and Storing Apples. To (1) determine comparative costs and returns from alternative methods of packing and storing apples in Pennsylvania; and (2) evaluate the effect of levels of utilization and scale for different types of equipment used for packing and storing various types of packages.  
Agr. Econ. and Rur. Sociol. 1298 (NEM-19)
- S. C.      Economic Problems in Handling and Marketing Fresh Vegetables. To (1) isolate areas of inefficiency in the use of labor and equipment in the processing, packing, grading, and handling of vegetables in South Carolina; and (2) develop and test more suitable and efficient methods and equipment for performing these necessary operations.  
Agr. Econ. and Rur. Sociol. 427 (SM-8)

Tenn.

Relative Costs and Effects on Quality and Market Value of Hand Capping and Machine Capping of Strawberries for Processing. To (1) learn relative costs of hand capping strawberries in the field and machine capping them in the processing plants; (2) compare quality and wastage of strawberries capped by the two methods; and (3) learn effects of refrigerated storage on strawberries capped by the two methods.

Bact. and Chem., Agr. Econ. and Rur. Sociol. ES 385

Tex.

Cost of Various Handling Methods of Citrus. To (1) evaluate efficiency of present and new handling methods in packinghouse; (2) compare cost of bulk handling from grove to packing shed with cost of field box method; and (3) evaluate present and future needs of packers and canners with respect to location, policies, adjustments, and needs to adequately accommodate expanding volume of citrus.

Agr. Econ. and Sociol. 896 (SM-4) Coop. AMS

Va.

Farm Work Simplification. 1. Work Simplification in Apple Packing Shed Operations. To (1) apply techniques of motion and time study developed in industry to operations performed in apple packing sheds; (2) determine methods of working, arrangements of work places, and types of equipment that will reduce hours of labor required to operate apple packing sheds and to prepare detailed instructions needed by operators to carry out those plans; (3) determine principles of motion economy applying to apple packing shed operations and prepare illustrations of those principles; (4) determine those combinations of practices, facilities, and layout, under varying conditions of size, etc., which provide minimum costs at various levels of operation; and (5) attain the following specific objectives: (a) eliminate unnecessary steps, (b) arrange necessary steps in best order, (c) maximize productivity of each step, (d) integrate necessary steps to maximize productivity of whole job, (e) determine time it takes to do the jobs, and (f) develop standards of work performance and techniques for achieving these standards.

Agr. Econ. and Rur. Sociol., Agr. Engin., Hort. 86022-1

- Va.            Handling Methods and Cost in the Packing and Distribution of Apples. Discover ways of reducing handling cost in packing and distribution of apples. Will place primary emphasis on a study of effect of size and operation and type of equipment on cost of packing apples. Data will be collected on packinghouse operations normally packing fewer than 100,000 bushels of apples annually. Will study efficiency of distributing apples through established wholesale channels, and what effect changes in packinghouse operations have on efficiency of distribution.  
Agr. Econ. and Rur. Sociol. 86095
- Wash.        Economic Efficiency in Freezing Washington's Principal Fruit and Vegetable Crops. To (1) describe frozen food industry of State with emphasis on major crops frozen; (2) learn physical input-output relationships in raw material assembling and processing; and (3) learn comparative economic efficiency of different methods, organizations, and scale of operations used in assembling and freezing.  
Agr. Econ. 1300 (WM-17)
- Wash.        Evaluation of Consumer Packages for Medium-To-Large Sized Apples from the Pacific Northwest. To (1) evaluate packing and shipping characteristics of selected packages and maintenance of fruit quality in transit to retail outlets; (2) learn costs of packing and handling selected packages as compared with types of containers in current use; (3) evaluate trade and consumer acceptance of test packages; and (4) study development of efficient work methods, machinery and equipment for packing and handling the more promising types of consumer packages.  
Agr. Econ. 1362 (WM-19) Coop. AMS
- W. Va.       Handling Methods and Cost in Packing Apples. To (1) learn comparative efficiency of methods and types of equipment for sorting, sizing and packing apples in Appalachian area; and (2) develop and test improved methods and types of equipment for performing these operations.  
Agr. Econ., Hort. 97 (NEM-19) Coop. AMS

Transportation, Storage, and Interregional Competition

- Fla.            Study of the Competitive Relationship Between Florida and California Celery. Learn competitive relation between Florida and California celery at retail level with emphasis on: relative and absolute sales of two States at different price levels and with varying price differentials between two products; extent to which customers compare prices and quality of celery from two areas when purchasing same.  
Agr. Econ. ES 504
- Ga.            Potential Markets for Vegetables Grown in North Georgia Counties. To learn (1) potential markets for vegetables grown in selected North Georgia counties; and (2) type of competition growers would meet in designated potential markets.  
Agr. Econ. 303
- Hawaii        Market Potentials of Hawaiian Horticultural Products. To evaluate the market potential of Hawaiian horticultural products when they are offered in direct competition with comparable commodities produced and sold on the Mainland.  
Agr. Econ. 359
- Hawaii        Economic Factors Involved in the Sale of Frozen Fruits and Vegetables and/or Products in Honolulu and Selected Markets in the Western States. To (1) analyze marketing process through which frozen fruits and vegetables and/or products on the market are distributed on the Honolulu market; (2) determine the impact of Mainland-produced frozen fruits and vegetables and/or products on the market for Hawaiian-produced fresh or processed fruits and vegetables and/or products in Honolulu; and (3) determine competitive position of Hawaiian frozen fruit products in Honolulu and Mainland markets.  
Agr. Econ. 360 (WM-17)
- Ind.           Marketing of Indiana Tomatoes and Tomato Products. To (1) evaluate contributions that other merchandising methods can make in improving the competitive position of Indiana tomato processors; (2) conduct experimental program designed to help merchandising practices; (3) learn level of processing efficiency which tomato processors in Indiana must achieve to compete with processors in other areas; and (4) evaluate conditions which may develop in production and processing industries in the next 10-15 years if no research and development program is used.  
Agr. Econ., Hort. 838

Maine      Improvement of Market Structures and Marketing Practices Affecting Prices, Movement and Distribution of Maine Potatoes. To (1) determine competitive market outlets as to quality, pack, volume and prices from standpoint of effective distribution; (2) ascertain influence of size and marketing season of intermediate potato crops on prices, distribution and movement of Maine potatoes in the fall, and reports and shipments of early potatoes on movement of Maine potatoes in the spring; (3) determine effects of various types of information on prices, movement, and distribution of Maine potatoes; and (4) analyze potential and feasibility of using larger amounts of Maine potatoes as potato products.

Agr. Econ. and Farm Mgt. 44

Miss.      Minimization of Shipping Distances for Fresh Vegetables Produced in Mississippi and Competing Areas. To (1) describe actual distribution and flow of vegetables for fresh market from Mississippi and competing areas; and (2) learn flow of vegetables minimizing shipping distances from producing areas to consuming centers.

Agr. Econ. HA-25 (SM-8)

N. H.      Competitive Position of the New England Apple Industry with Particular Reference to New Hampshire. To (1) study existence and importance of various factors causing past trends in production, marketing, and consumption of apples; (2) study institutional framework and pricing mechanism of apple marketing system; (3) study nature and extent of competition between New England apples and apples of other regions and substitute fruits; and (4) assess impact of anticipated changes in production of apples and other fruits, marketing costs, and consumption on New England apple industry.

Agr. Econ. 106

N. J.      Market Structure and Marketing Practices in Handling New Jersey Potatoes. To (1) determine competitive market outlets as to quality, pack, relative prices and volume from standpoint of effective distribution; (2) study influence of size and period of shipment of early potatoes on price and movement of New Jersey potatoes, and late crop prospects effect on New Jersey potato prices and distribution; (3) determine effect on price and distribution of potatoes of various types of information such as crop reports, stocks on hand, statements of public programs, imports and exports, and future market, such as Mercantile Exchange; and (4) analyze feasibility of moving larger volume of potatoes in form of potato products.

Agr. Econ. 38 (NEM-20)



- N. J.      To Determine, Compare and Evaluate Procurement Practices Among Processors, and Adjust Production to Meet Processing Needs. To (1) learn procurement practices among State processors in procuring State production and out-of-State production; and (2) readjust State production to meet processing needs.  
Agr. Econ., Hort. 40 (NEM-16) Coop. AMS
- N. Mex.      Seasonality of Supplies and Prices and Minimum Marketing Facilities for Vegetables in New Mexico. To learn (1) seasonality of supplies and prices in potential markets for selected commercial vegetables produced in New Mexico; (2) minimum marketing facilities and marketing costs for onions, lettuce, carrots, tomatoes, potatoes, and other important crops; and (3) minimum marketing facilities to assemble and market vegetable crops of noncommercial producers in the Middle Rio Grande Valley.  
Agr. Econ. 77
- N. C.      Interregional Competition in Vegetables Produced for Fresh Market and for Processing. To (1) estimate present and prospective levels of consumption of selected fresh and processed vegetables; (2) ascertain quantities of vegetables moving to those consumer centers from various producing areas; (3) measure costs of transfer of vegetables from each producing area to each consumer center; (4) learn effect, for present and prospective levels of production, of transfer costs on least-cost flows of vegetables from producing areas; and (5) draw implications on basis of above for producers in State and the rest of the Southeast with respect to long-run output and prices for major vegetable crops grown.  
Agr. Econ. HM-26 (SM-8) Coop. AMS
- Ohio      The Marketing of Greenhouse Vegetables in Ohio. To determine (1) competitive position of greenhouse tomatoes and other vegetables to that of shipped product now and before the war; (2) methods of merchandising and quality control to help the industry to better its competitive position; and (3) methods and standards by which growers and shippers can market their product in a manner more acceptable to consumers.  
Agr. Econ. and Rur. Sociol. 95

Va.

Improvement of the Competitive Position of Virginia Vegetable Producers Through Changed Marketing Practices.  
To determine (1) vegetable crops that have been placed in an unfavorable competitive position by marketing practices; (2) marketing practices that have led to this unfavorable position; and (3) changes in marketing practices that hold promise of improving the competitive position of these crops.  
Agr. Econ. and Rur. Sociol. 86096

#### Government Programs

Calif.

(Berkeley)  
(Davis)

Economic Analysis of Marketing Control Programs for California Fruits and Vegetables Under State and Federal Legislation. To (1) analyze development of statutes through which compulsory market control programs have been sanctioned; (2) analyze development of operations of major commodity programs and voluntary programs antecedent to them; (3) determine kinds of market problems which apparently can be solved or mitigated through market control programs; (4) determine apparent requirements for effective administration of State, Federal and voluntary programs; (5) determine objectives of market control program and appraise degree to which objectives have been met; and (6) determine effects of control programs upon productive capacity, demand levels, magnitude of total receipts, volume of consumption, etc.

Agr. Econ. 1379

## REGIONAL PROJECTS

NCM-13

Quality-Price-Yield Relationship of Sweet Corn for Processing. To (1) determine the relationship of prices and pricing methods of raw sweet corn to the quality and yield at the farm level; (2) determine the relationship of prices and pricing methods of raw sweet corn to the quality and yield of canned sweet corn; and (3) evaluate present methods of selling raw sweet corn by growers to processors.

Minn. I-B.

NCM-15

Potato Grade-Price Relationships in the North Central Region. To (1) develop principles that will assist the grower in marketing the best combination of grades of potatoes; (2) improve grower returns through the use of grades and grade combinations that more nearly reflect market demands; and (3) determine the effect of grades and grade combinations on prices for different lots of potatoes which are sent from shipping points in various States but compete in the same terminal markets.

Nebr. I-D; N. Dak. I-C; Ohio I-D.

NCM-24

Quality Relationships in Marketing Fresh Tomatoes.  
PHASE I: An objective evaluation of market quality in relation to grading. PHASE II: A study of quality-yield-price relationship of fresh tomatoes produced in the North Central States. To determine (1) how tomatoes grown in this region are influenced by harvest and handling practices; and (2) whether yield, grade quality relationships and costs of marketing practices justify the commercial production of tomatoes for the fresh market in the North Central Region. PHASE III: An evaluation of tomato quality available during the marketing season in the North Central States. To (1) determine the quality of tomatoes offered for sale in the markets of the North Central States during the season that tomatoes are being marketed from this area; (2) obtain data on price differentials as influenced by quality and supply interaction; and (3) determine handler preference.

Ill. I-F.

(See also Part 22, Sec. a, Ind.)

NEM-16

Marketing Northeastern Fruits and Vegetables Through Processing Plants. To (1) determine cost relationships and improve plant efficiency in the processing of fruits and vegetables; (2) determine, compare, and evaluate procurement practices among processors for the improvement of grower-processor relations and increase the utilization of Northeastern production; and (3) test consumer responses to merchandising techniques and promotional programs for the distribution of Northeastern processed products.

Maine I-C; Md. I-G; Mass. I-C; N. J. I-H; Pa. I-C.  
(See also Part 9, Sec. c, Mass.)

NEM-18

Quality Maintenance and Prepackaging in Marketing Fresh and Processed Vegetables. To (1) develop improved methods of handling, packaging and storage in order to maintain quality in marketing fresh vegetables; (2) develop objective measures of quality for fresh and processed vegetables; and (3) determine consumer and trade acceptance and preference for specific marketing practices and their results.

N. J. I-C; N. Y. (Cornell) I-C.  
(See also Parts 7, Sec. d, N. J.; 9, Sec. c, Md., Mass., N. J., N. Y. (Cornell), R. I.; 13, Sec. d, Mass.; 22, Sec. a, Md., Md., Mass., N. Y. (Cornell), R. I.)

NEM-19

Handling Methods and Costs in Storing and Packing Apples. To discover ways of reducing costs in storing and packing apples under conditions prevailing in the Northeast.

Maine I-G; N. Y. (Cornell) I-G; Pa. I-G;  
W. Va. I-G.

NEM-20

Effects of Changing Marketing Practices on Product Quality, Consumer Acceptance, and Returns in Marketing Potatoes. To (1) measure consumer acceptance through market testing of new packs of potatoes such as washed potatoes, prepeeled potatoes, and new institutional packs; (2) measure the influence of merchandising, advertising, and other promotional and marketing practices on sales, margins and returns; (3) determine potential utilization in processed potato products; and (4) evaluate physiological effects of new marketing practices on such factors as taste, color, and keeping quality.

Maine I-C; N. J. I-H; N. Y. (Cornell) I-C; Pa. I-C.  
(See also Part 22, Sec. b, N. Y. (Cornell), R. I.)

SM-4

Increasing Efficiency in the Marketing and Pricing of Fresh and Processed Citrus Fruit. To (1) determine demand relationships for citrus and citrus products; and (2) increase the efficiency of handling citrus fruits in the distribution channels.

Fla. I-B; Fla. I-G (3 projects); P. R. I-A; Tex. I-G;  
Tex. I-F.

SM-8

Evaluation of Alternative Vegetable Marketing Organizations and Handling Methods. To determine (1) how well the existing marketing organizations function for selected producing areas with regard to providing adequate outlets, facilities and services, and to indicate needed improvements; and (2) the feasible methods of maintaining quality during the marketing process and their relative economic advantages.

Ala. I-A; Fla. I-F; Ga. I-F; La. I-C; Miss. I-H;  
N. C. I-H; P. R. I-C; S. C. I-G; Tenn. I-B; Tenn. I-A;  
Tex. I-A (2 projects).  
(See also Part 22, Sec. a, Fla.)

WM-17

Competitive Position of the Western Region in Marketing Frozen Fruits and Vegetables. To (1) study the trends in the production of fruits and vegetables and in the relative quantities consumed in fresh, frozen, and canned form; (2) determine factors influencing cost and efficiency in the processing, distribution, and retailing of frozen fruits and vegetables; (3) relate these factors to the competitive position of the major producing States and regions and to past trends and present organization of the industry; and (4) project an efficient pattern for the future development of the industry.

Calif. I-B; Hawaii I-H; Oreg. I-G; Wash. I-G.

WM-19

Economic and Engineering Studies of Fruit and Vegetable Handling, Packing, and Packaging. To (1) determine the basic physical and economic relationships involved in the handling and packing of western fruits and vegetables; (2) indicate how changes in plant organization and operation influence efficiency and costs; (3) devise new and improved equipment and containers and to determine how these influence plant operations and packing and shipping costs; and (4) develop, on the basis of the above, practical methods for improving the packing and packaging of fruits and vegetables under western conditions.

Calif. I-G; Idaho I-G; Oreg. I-G; Wash. I-G.

LIST OF COMPILATIONS OF FEDERAL-GRANT RESEARCH PROJECTS  
AT STATE AGRICULTURAL EXPERIMENT STATIONS

| ARS-23-8: |                                    |  |
|-----------|------------------------------------|--|
| Part :    | Subject-Matter Area                | Title of Section   |
| Numbers : |                                    |  |
| 1         | Agricultural Chemistry             | Agricultural Chemistry   |
| 2         | Agricultural Economics             | a. Prices, Incomes, &<br>General Studies of Com-<br>modities & Industries<br>b. Farm Management<br>c. Land Economics<br>d. Farm Finance & Taxation   |
| 3         | Agricultural Engineering           | a. Land & Water Use & Develop-<br>ment<br>b. Power Machinery & Equipment<br>c. Farm Structures & Materials   |
| 4         | Animal Husbandry                   | a. Beef Cattle<br>b. Sheep & Goats<br>c. Swine   |
| 5         | Dairy Husbandry                    | Dairy Cattle   |
| 6         | Dairy Technology                   | Dairy Technology   |
| 7         | Entomology & Economic<br>Zoology   | a. Field Crop Insects<br>b. Fruit, Nut & Vegetable<br>Insects<br>c. Miscellaneous Insects &<br>Economic Zoology<br>d. Insecticides   |
| 8         | Field Crops                        | a. Cereal Crops<br>b. Oil, Fiber, Tobacco &<br>Sugar Crops   |
| 9         | Food Science & Technology          | a. Food Chemistry, Micro-<br>biology, Sanitation &<br>Public Health<br>b. Food Engineering, Processing,<br>Product and Process Develop-<br>ment, Utilization and Waste<br>Disposal<br>c. Food Quality & Standards,<br>Acceptance, Preference, &<br>Marketing |
| 10        | Forage Crops, Pastures<br>& Ranges | Forage Crops, Pastures<br>& Ranges   |
| 11        | Forestry                           | Forestry   |

ARS-23-8:

| Part :    | Subject-Matter Area | Title of Section |
|-----------|---------------------|------------------|
| Numbers : |                     |                  |

|    |                                |  |
|----|--------------------------------|--|
| 12 | Fruits & Nuts                  | Fruits & Nuts  |
| 13 | Home Economics                 | <ul style="list-style-type: none"> <li>a. Human Nutrition</li> <li>b. Housing</li> <li>c. Clothing &amp; Textiles</li> <li>d. Foods-Consumer Quality &amp; Utilization</li> <li>e. Household Economics &amp; Management</li> </ul>   |
| 14 | Economics of Marketing         | <ul style="list-style-type: none"> <li>a. Field Crops</li> <li>b. Fruits &amp; Vegetables</li> <li>c. Livestock, Meats &amp; Wool</li> <li>d. Dairy Products</li> <li>e. Poultry &amp; Poultry Products</li> <li>f. Forest Products &amp; Ornamental &amp; Drug Plants</li> <li>g. Cross-Commodity &amp; Functional Studies</li> </ul> |
| 15 | Meteorology                    | Meteorology  |
| 16 | Ornamental & Drug Plants       | Ornamental & Drug Plants   |
| 17 | Plant Pathology & Bacteriology | <ul style="list-style-type: none"> <li>a. Plant Pathology, Botany, &amp; Diseases of Miscellaneous Crops</li> <li>b. Diseases of Field Crops</li> <li>c. Diseases of Fruit Crops</li> <li>d. Diseases of Vegetable Crops</li> </ul>  |
| 18 | Plant Physiology & Nutrition   | Plant Physiology & Nutrition   |
| 19 | Poultry Industry               | Poultry Industry   |
| 20 | Rural Sociology                | Rural Life Studies   |
| 21 | Soils                          | <ul style="list-style-type: none"> <li>a. Soil Chemistry &amp; Microbiology</li> <li>b. Soil Fertility, Management &amp; Soil-Plant Relationships</li> <li>c. Soil Physical Properties, Conservation &amp; Classification</li> </ul>   |
| 22 | Vegetables                     | <ul style="list-style-type: none"> <li>a. Vegetable Crops</li> <li>b. Potatoes</li> </ul>  |
| 23 | Veterinary Science             | Veterinary Science   |
| 24 | Weeds                          | Weed Control   |





